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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,297	08/13/2001	Kia Silverbrook	360040	6041

7590 10/03/2003  
KIA SILVERBROOK  
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EXAMINER

DO, AN H

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/807,297

Applicant(s)

SILVERBROOK, KIA

Examiner

An H. Do

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 130-137 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 130-137 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Applicant's Response filed on 10 July 2003 has been acknowledged in Paper No. 24.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 130-133 are rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook (WO 96/32808).

Silverbrook discloses in Figure 1 (b) an inkjet printhead having a series of nozzles of the ejection of ink wherein each of said nozzles has a rim (104) formed by the deposition of a rim material layer ( $\text{SiO}_2$ ) over a sacrificial layer (102) and a subsequent planar removal of at least said rim material layer ( $\text{SiO}_2$ ) so as to form said nozzle rim (104). Silverbrook also discloses said planar removal comprises chemical-mechanical planarization (Figure 1b) of said rim material layer ( $\text{SiO}_2$ ). Silverbrook further discloses parts (Figure 1b) of said sacrificial layer (102) are also removed by said planar removal. It is also disclosed that the planar removal process is an etching process (page 18, lines 9-10).

3. Claims 130-133 are rejected under 35 U.S.C. 102(e) as being anticipated by Wen et al (US 6,106,089).

Wen et al discloses in Figure 1(b) an inkjet printhead (16) having a series of nozzles of the ejection of ink wherein each of said nozzles has a rim (54) formed by the deposition of a rim material layer (50) over a sacrificial layer (56) and a subsequent planar removal of at least said rim material layer (56) so as to form said nozzle rim (54). Wen et al also discloses said planar removal comprises chemical-mechanical planarization (column 6, lines 4-7) of said rim material layer (50). Wen et al further discloses parts (Figure 1b) of said sacrificial layer (56) are also removed by said planar removal. It is also disclosed that the planar removal process is an etching process (column 6, lines 13-21).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 134-137 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen et al (US 6,106,089) in view of Tsu et al (US 6,294,420 B1).

Silverbrook et al discloses the claimed invention except for reciting the rim material layer comprises TEOS glass, Si<sub>3</sub>N<sub>4</sub>, MOCVD and ECR CVD TiN.

Tsu teaches the material layer comprises TEOS glass (column 5, lines 64-67 and column 6, lines 1-5),  $\text{Si}_3\text{N}_4$  (column 1, lines 23-27), MOCVD (column 3, lines 52-55) and ECR (column 1, lines 40-44) CVD TiN.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a variety of techniques to deposit materials, as taught by Tsu et al, for the purpose of obtaining a good oxidation resistance and a high work function as noted in column 2, lines 50-59 of Tsu et al.

***Response to Arguments***

6. Applicant's arguments with respect to claims 130-137 have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 703-308-0525. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 703-308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



AD  
September 20, 2003



**Stephen D. Meier**  
**Primary Examiner**